

## **A MONOLITHIC MAGNETIC READ-WHILE-WRITE HEAD APPARATUS AND METHOD OF MANUFACTURE**

### **5 ABSTRACT OF THE DISCLOSURE**

A multi-track magnetoresistive (MR) tape head with precisely-aligned read/write (R/W) track-pairs and a method for fabrication on a monolithic substrate wherein a plurality of tape heads are fabricated from a single substrate wafer by using complete thin-film processing on both sides of the wafer. The recording elements are aligned with  
10 readers opposite writers on the other side, providing a method for fabricating a multi-track thin-film magnetoresistive tape head with precisely-aligned R/W track-pairs fabricated on a monolithic substrate. As used herein, the term monolithic denominates an undivided seamless piece. The wafer is built using modified standard thin-film processes for fabricating direct access storage device (DASD) heads and modified  
15 substrate lapping procedures. The gap-to-gap separation within each R/W track-pair is reduced to nearly the thickness of the substrate wafer, which is significantly less than conventional separations known in the art. By fabricating on both sides of the wafer, hundreds or thousands of head elements may be aligned in one step while reducing the number of pieces in the completed head assembly.